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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

NUCLEAR ENERGY INSTITUTE
and
UNITED TELECOM COUNCIL

Request for Waiver to Permit
The Use of Certified Wireless Headsets and
Intercom Devices at Nuclear Facilities

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Federal Communications Commission
Office of the Secretary

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To: The Acting Chief, Office of Engineering and Technology

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Dated: July 20, 2005

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SUMMARY

The Nuclear Energy Institute ("NEI") and the United Telecom Council ("UTC"), based upon decades of knowledge regarding the unique physical structure, communications needs and regulatory requirements associated with nuclear plants, and supplemented by NEI's recent expansive survey of the plants' current communications equipment and requirements, have concluded that the nuclear power industry must seek waiver of the license eligibility requirements under Part 74 of the FCC Rules to permit continued use of certain Telex intercom and headset equipment.

Grant of the Waiver is in the public interest because access to the Telex equipment demonstrably enhances worker safety and contributes to safe plant operation. Further, the fact that there has been no evidence that the plants' use of Telex equipment has caused *any* interference to eligible users' transmissions during current operation demonstrates that the underlying purpose of the eligibility rule would not be compromised by a grant of the relief requested. Moreover, given the lengthy list of unique circumstances associated with such use (e.g., transmission at only 50 milliwatts; signal attenuation at just 2,000 feet) which, together, effectively preclude any interference to the eligible users, strict application of the rule would indeed be inequitable, unduly burdensome and contrary to public interest. Finally, as detailed herein, after an exhaustive survey and additional research, neither NEI nor UTC can find a suitable, reasonable alternative that would continue to contribute to the industry's compliance with the Nuclear Regulatory Commission's ("NRC's") radiation dose standards because none possess all of the requisite performance features of the Telex equipment that the plants have come to rely upon to protect nuclear workers.

Grant of the requested relief will remove the growing uncertainty surrounding the plants ongoing right to use the Telex equipment and will enable the nuclear plants to continue to contribute to the industry's compliance with the NRC's dose radiation standards. Ample Commission precedent

exists to support the grant of a 5 year waiver of the FCC's license eligibility requirements under Part 74 of the FCC Rules. Accordingly, as set forth more fully herein, good cause exists for grant of a waiver.

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To: The Acting Chief, Office of Engineering and Technology

PETITION FOR WAIVER

In accordance with the Commission's Rules,¹ the Nuclear Energy Institute ("NEI") and United Telecom Council ("UTC") (collectively, the "Petitioners"), on behalf of the Nuclear Regulatory Commission ("NRC")-licensed operators ("licensees") of commercial nuclear power plants in the United States (the "plants"), hereby request a waiver of the FCC's license eligibility requirements under Part 74 of the FCC rules ("Waiver").² This Waiver is necessary in order to permit the licensees to continue to operate certain wireless headsets and intercom devices certified and manufactured by Telex Communications, Inc. ("Telex equipment") on nuclear plant sites. Petitioners submit that good cause exists to grant the instant Waiver because of the unique circumstances associated with the licensees' use of the Telex equipment at the plants, together with the fact that there is no reasonable alternative currently available that would provide the same level

¹ 47 C.F.R. §§ 1.3 and 1.925(b)(3).

² 47 C.F.R. § 74.832(h).

of communications capabilities that are essential to reducing workers' exposure to radiation and otherwise enhancing plant operation.

These requirements, combined with the fact that there have been no reported incidents of interference with FCC-licensed Part 74 eligible users during the entire period the plants have used the Telex equipment, fully justify Petitioners' request that the FCC grant the nuclear plants a five year waiver of Part 74 of the FCC Rules so that nuclear plants can continue to utilize the Telex equipment.

I. Background on Petitioners

A. NEI is a not-for-profit 501(c)(6) corporation which is responsible for representing the commercial nuclear energy industry. NEI's members include all entities licensed by the NRC to operate the Nation's 103 nuclear plants. NEI is responsible for establishing broad, unified nuclear industry policy on generic matters affecting nuclear energy, including the regulatory aspects of operational and technical issues. NEI promotes the beneficial uses of nuclear energy and technologies in the United States and around the world, develops policy on key legislative and regulatory issues, and serves as a unified industry voice before the U.S. Congress, Executive Branch agencies, and federal regulators.

B. UTC has been the national representative on communications and information technology matters for the nation's electric, gas, water and steam utilities and natural gas pipelines, since its formation in 1948. UTC's members provide public service and public safety-related services throughout the United States and its territories. UTC's approximately 600 core members range in size from large combination electric-gas-water utilities that serve millions of customers, to smaller, rural electric cooperatives and water districts that serve only a few thousand customers each. Among UTC's member companies are most, if not all, of the owners and operators of the nuclear

power generating facilities on whose behalf the subject relief of this Waiver is sought. UTC fully supports the statements herein.

C. Accordingly, as the two principal representatives of the nuclear industry on technology, communications and regulatory matters, Petitioners are requesting a waiver of the FCC's Part 74 licensee eligibility criteria in order that the nuclear industry may continue to operate the Telex equipment. Absent a Waiver grant, as of October 7, 2005 the nuclear industry would be without communications capabilities critically necessary to meet the NRC's radiation dose standards, known by the acronym ALARA ("as low as reasonably achievable"), which is more fully defined in Section III hereof. Together with other NRC regulations, the ALARA standards protect plant workers when performing certain sensitive operational and maintenance functions that promote public health through safe plant operation.

II. NEI's Efforts to Achieve Industry Compliance With FCC Regulations

Since 2003, the FCC has authorized use of Telex equipment at nuclear plants. Experimental Special Temporary Authorizations ("STAs") originally were granted to Telex.³ In April of this year, the Commission extended that authority by granting an STA to NEI.⁴ NEI's STA expires on October 7, 2005.

Promptly following the FCC's grant of NEI's STA, NEI undertook a series of meetings with representatives of the FCC's Office of Engineering and Technology, the Mass Media Bureau and the Wireless Bureau's Public Safety and Critical Infrastructure Division. These discussions examined the unique circumstances associated with the nuclear plants' communications needs and the

³ See 0135-EX-ST-2003, granted April 7, 2003; see also, 0169-EX-ST-2004, granted April 7, 2004; see also, 0547-EX-ST-2004, granted October 7, 2004.

⁴ See 0127-EX-ST-2005, granted April 7, 2005; attached as Exhibit B.

mitigating factors associated with their Part 74 spectrum usage. The mitigating factors include: (i) use in steel fortified, thick-walled concrete buildings, operating on large, often remote sites; (ii) transmitting at just 50 milliwatts power; (iii) signals attenuating at under 2000 feet;⁵ and (iv) a record of not causing any interference with the eligible users' transmissions.

This Waiver request demonstrates the unity of the two organizations that know best the communications requirements necessary to ensure nuclear worker safety and the availability of equipment that could be utilized in place of the Telex equipment. Petitioners have worked with the FCC to identify a regulatory solution that will protect the FCC eligible users, while permitting the plants to utilize Telex equipment in order to continue to meet the nuclear industry's operational and regulatory requirements.

III. Nuclear Plant Configuration and NRC Regulations

Nuclear plants are large industrial facilities located on sites ranging in size from approximately 400 to 1,400 acres. These large base load power plants are included in the FCC's definition of the nation's critical infrastructure industries.⁶ Most are located in remote areas, far from population centers, broadcast facilities, studios or towers. The nuclear reactor containment and other plant buildings are generally clustered inside a fenced area which is itself encircled by a

⁵ See March 3, 2005 letter from Special System Services (SSS) to the FCC regarding a test SSS conducted on behalf of Exelon Generation Company at the Limerick Nuclear Plant, in Limerick, PA, attached as Exhibit C hereto. While acknowledging that attenuation data will vary plant-to-plant, Petitioners contend that this test is representative of the likely average attenuation of the Telex equipment signal at an average plant.

⁶ *Who We Are: Public Safety & Critical Infrastructure Division* at <http://wireless.fcc.gov>. ("The FCC Public Safety & Critical Infrastructure Division is tasked with insuring that the Nation's utilities, transportation entities and other businesses integral to the nation's economy have access to effective and efficient communications technologies and services, particularly in times of emergencies and crisis.") This designation – utilities deemed to be critical infrastructure industries – applies to the regulatory efforts of all federal agencies.

perimeter security fence. There may be as much as several thousand feet between the two fences, though the distances vary.⁷

The nuclear industry is perhaps the most heavily regulated industry in America. Indeed, the design, construction, operation and post-operation (decommissioning) of nuclear plants must comply with extraordinarily precise and highly structured federal regulations. As a result, reactor containment buildings are constructed with four to six foot thick concrete walls, reinforced with steel. The interiors of the connected buildings (e.g., turbine building, fuel handling building, emergency diesel generator building, auxiliary building) are structurally fortified and filled with large pipes, assorted water and other storage tanks, various large scale pumps and heaters, hydraulic systems, generators, metal bridges, cranes and other heavy equipment necessary for electricity generation through the use of nuclear power. In fact, NRC regulations mandate that nuclear generation facilities be built to withstand earthquakes, hurricanes, tornadoes and floods. The plants are likely the most robust industrial facilities in the Nation.

The NRC also mandates that nuclear plants meet rigorous worker radiation protection standards, one of which is known by its acronym, ALARA, which stands for "as low as reasonably achievable." The NRC's ALARA mandate requires:

Making every reasonable effort to maintain exposures to radiation as far below the dose limits in this part as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the benefits to the public health and safety, and other societal and socioeconomic considerations, in relation to the utilization of nuclear energy and licensed materials in the public interest.⁸

⁷ This is an important consideration, given the fact that, as noted herein, the Telex equipment operating at 50 milliwatts attenuates to zero at roughly 2,000 feet. *See*, n 5, *supra*.

⁸ 10 CFR 20.1003 et seq.

Thus, although NRC regulations limit nuclear worker radiation doses to no more than five rem in any year,⁹ ALARA mandates that plants limit that exposure even further. During the 1990s, under the ALARA standards and associated practices, workers on average received less than 10% of the maximum annual radiation dose allowed by the NRC.¹⁰

In order to appreciate the importance of the Telex equipment to the nuclear industry, it is helpful to understand how radiation is present in a nuclear plant and to appreciate the unique role of the Telex equipment in limiting worker exposure. The nuclear fission process inside a nuclear reactor creates radioactive material. Small amounts of this material leave the reactor and circulate through the plants' piping systems in the primary coolant. As a result, small metal particles in the primary coolant—from normal operation and wear of pumps, valves and pipes—also become radioactive. These radioactive materials are carried through piping systems and are deposited in, for example, pipes and valves, where they become possible sources of radiation exposure for plant workers. Notwithstanding the plants' built-in shielding, there are radiation areas in which workers perform various maintenance and other tasks, during outages and year round. A radiation area is defined in NRC regulations as an area of the plant in which an individual receives a dose in excess of 0.005 rem (0.05 mSv) in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates.¹¹ Access to such areas is required by NRC regulation to be controlled and workers are to be protected against ionizing radiation when in a radiation area. One way this is done is by ensuring doses are "as low as reasonably achievable," and thus, ALARA-compliant. Most occupational doses are received during outages when workers are engaged in refueling activities and

⁹ A rem is a measure of the amount of radiation dose that takes into account the potential effects on the human body.

¹⁰ See <http://www.nei.org>.

¹¹ See 10 CFR 20.1003.

performing maintenance work on equipment such as primary coolant system pipes, pumps and valves.

Through training, adoption of best practices, use of protective clothing and equipment, guidance by expert health physics personnel, and internal and external exposure testing, the ALARA principle affects every aspect of each plant's radiation protection program and has resulted in lower worker rem dosage.¹² As described in greater detail in Section V, the Telex equipment has been a critical component of the carefully assembled suite of equipment (along with video cameras, local area network ("LAN") access points and electronic dosimeters) (the "critical equipment components") employed to enable health physics personnel to remotely monitor and communicate with workers in radiation areas throughout the plants so that critical plant operations can be completed in a manner consistent with the NRC's ALARA standards.

IV. Nuclear Power Industry's Use Of Telex Equipment

Promptly following the FCC's grant of NEI's request for a STA, NEI undertook a comprehensive survey of its members to confirm the nature and context of the use of Telex equipment use at the plants. The responses left no doubt that plant staff rely on the Telex equipment to meet the NRC's ALARA requirement to limit plant workers' radiation doses and to further enhance safe plant operations. In particular, staff at virtually every plant noted the combination of certain performance features of the Telex equipment as being unique and valuable to ensuring greater worker protection: wireless; hands-free; full-duplex/multi-users; reliable/no call drop; no background noise; no inadvertent actuation; uninterrupted voice transmission; ease of use; and durability ("requisite performance features").

¹² *Radiation Protection for Nuclear Power Plant Workers*, July 2000 at <http://www.nei.org>.

During an "outage," which occurs every 18-24 months, and generally lasts 25-35 days, plants cease operation and, among other activities, refuel the reactor by removing irradiated fuel ("used fuel") and replacing it with "fresh" or unirradiated fuel. During outages, used fuel is moved to a used fuel pool. Subsequent to an outage, and if the fuel pool is filled to its capacity, some fuel is moved from the pool and placed in large concrete and steel fortified casks ("casks"). The casks are then carefully moved to concrete storage pads, licensed by the NRC. In addition, there are numerous other critically important operations performed during outages with the assistance of Telex equipment, including turbine maintenance; overhauling various pumps, motors and valves; installing modifications; performing testing and inspections; clearing and maintaining steam generators; and repairing equipment (e.g. high pressure injection safety equipment) that can not be accomplished while the plant is operating.

Specifically, plant personnel report that:

radiological safety is enhanced with the ability to communicate with workers in the field while being able to view remote dose and dose rate information from a central monitoring station. The ability to communicate with the worker to reposition their body or to move to a different location saves personnel radiation exposure;¹³

radiation dose has been reduced through use of (Telex) wireless communications and the ability to monitor work remotely while simultaneously communicating with workers;¹⁴

Telex employs design functionality and utilizes frequency spectrum that uniquely meets the essential performance criteria for Plant by providing communications that are continuous, instantaneous, predictable and reliable;¹⁵

¹³ Questionnaire response #9. (NEI obtained the responses from the plants with the understanding that the information would be treated confidentially, thus the numerical references.)

¹⁴ Questionnaire response #9.

¹⁵ Questionnaire response #11.

Operator's Radiation Protection Unit has struggled with ineffective outage communications for many years and has investigated numerous systems and the Telex BTR 700-800 series is superb in its ease of use, durability, coverage area, quality of communication and ease of set-up. No other system on the market can duplicate each of these assets of the Telex system at this time;¹⁶ and

Telex is used in major maintenance activities where communication is essential (e.g., RHR pump replacement/repair; industrial safety – confined spaces, hazardous environments). Workers must be able to multi-task to perform activities and meet ALARA. Many activities are performed on mobile equipment, i.e., cranes, refueling bridge, elevators, etc. Teathering between mobile platforms and equipment is not practicable. Teathering workers with wired systems introduces industrial safety concerns, i.e., tripping hazards.¹⁷

With regard to duration of use, the responses, taken together, suggest that the plants' use of Telex equipment during an outage is virtually 24/7 for the entire 25-35 day outage period. In non-outage contexts, use is more episodic. Plant personnel are also required by NRC regulation and plant procedure to maintain strict control over the Telex equipment (based in part on its use in high radiation areas).

In terms of where the Telex equipment is used, the vast majority of plants use Telex equipment extensively within the reactor buildings. Only nine of the plants report that they also use the Telex equipment outside the reactor buildings, but within the "protected area;" the area containing the reactor buildings which is fenced for security purposes. Such outdoor use of the Telex equipment is undertaken most frequently, in the context of moving the casks containing used fuel to the NRC-licensed auxiliary storage pads. A small minority of the plants also use the Telex equipment beyond the plants' "protected area," for such matters as security and training on nuclear plant operations at the simulator facilities.

¹⁶ Questionnaire response #17.

¹⁷ Questionnaire response #18.

Thus, the plants rely on Telex equipment for numerous critical communications functions when workers are operating in radiation areas of the plants and in certain other limited circumstances. While use is heaviest during the outage periods, some ongoing operations and maintenance work also requires Telex equipment in order to keep worker radiation exposure under NRC limits and reduce exposure even further in order to be compliant with the ALARA standards. However, even during the periods of maximum utilization, as noted in Section V(B) hereof, numerous mitigating factors result in no interference by plant users of Telex equipment with the eligible users' transmissions.

V. The FCC's Waiver Standards

The FCC may grant a Waiver if one of two standards is met: "1) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested Waiver would be in the public interest; or 2) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative."¹⁸ The FCC may also utilize the general waiver "good cause" analysis.¹⁹ For the reasons set out below, Petitioners maintain that a waiver is fully justified and that use of Telex equipment by plant personnel meets both of the Commission's waiver standards.

A. Granting Petitioners' Waiver is in the Public Interest Because the Underlying Purpose Of FCC Part 74 Would Not Be Served and Would Otherwise Be Frustrated By Application to the Nuclear Power Industry

Part 74 Subpart H of the FCC's Rules, and Section 74.832 in particular, limit authorized users of the frequencies on which the Telex equipment operates to broadcast and broadcast auxiliary

¹⁸ 47 C.F.R. § 1.925(b)(3)(i)-(ii).

¹⁹ 47 C.F.R. § 1.3.

users.²⁰ However, the underlying purpose of the Rule would not be served by strict enforcement of the eligibility requirement in this limited case, with a finite number of locations. As demonstrated herein, the overriding interest in reducing nuclear worker exposure can be reasonably met only through the use of Telex equipment.

In addition, the underlying purpose of the eligibility restrictions is, in large part, the protection of the eligible users' rights to their spectrum.²¹ Neither the Petitioners nor any of the plants have received, or are aware of, any claims by eligible users that the plants' use of the Telex equipment is causing, or has ever caused, any interference. Moreover, the current STA sets power limits and requires frequency coordination, which also could be a condition of the Waiver requested herein. Since eligible users have not experienced actual interference, and since the potential for future interference can be addressed through power level limits and frequency coordination, the underlying purpose of the eligibility rules is not served by strict enforcement in this case.

B. Unique Circumstances Compel a Grant of the Waiver

There are numerous unique circumstances associated with Petitioners' request for a Waiver, each of which favors a grant of the requested relief; all of which fully justify such a result. First, as noted above, many plants operate in rural areas away from population centers, on sites of approximately 400-1,400 acres. Second, the largest percentage of the plants' use of the Telex equipment occurs inside the reactor buildings, mostly within containment which, as noted herein, is comprised of four to six feet thick concrete and steel reinforced walls, designed to withstand earthquakes, tornadoes and other natural events. Third, the Telex equipment operates at a miniscule 50 milliwatts, meaning that - even in the context of outdoor use at the plants - the signal attenuates

²⁰ 47 C.F.R. § 74.832.

²¹ In re Entergy Nuclear Indian Point 2, LLC, Order DA 04-3499, 19 FCC Rcd 21256, 21258 (2004).

to zero at 2,000 feet.²² Fourth, according to all of the information Petitioners have gathered, including discussions with FCC staff, there has never been a report that use of Telex equipment by a plant caused any interference to an eligible user. Fifth, the responses by plant staff to the NEI questionnaire note that certain models of Telex equipment are “frequency agile” and thereby allow the equipment to automatically shift away from a channel that is being utilized by an eligible entity, thus further reducing the chance for any interference to eligible entities transmissions. Petitioners contend that these unique circumstances make replication, in another context, extremely unlikely, thereby further justifying grant of the requested relief.

C. Good Cause For Grant Exists; Strict Application of the Part 74 Eligibility Rules in this Limited Case Would be Contrary to the Public Interest

Good cause exists for the grant of the Waiver. Compliance with the NRC’s ALARA standard depends on continued access to the Telex equipment.

As noted herein, by using the Telex equipment, plant operators reduce workers’ exposure to radiation during outage operations as well as during routine maintenance operations that must be conducted while the plant is on-line. The requisite performance features also allow plant operators to enhance plant safety because reliable, hands free, full-duplex communication reduces the chances for miscommunication or lost communications, either of which could lead to higher doses, or perhaps even to an incident involving used fuel, or irradiated water, or some other plant function for which special care must be taken. Moreover, failure to use the most reliable and effective equipment would be contrary to the NRC’s efforts to drive nuclear power plant operators to use the best available technology to accomplish the objectives of the ALARA standard.

²² See n 5, supra.

If the plants are required to cease operation of the Telex equipment as of October 7, 2005, it could result in increased radiation exposure to workers and potentially compromise the high levels of plant safety already established by making certain activities more difficult. It is easy to envision, for example, that if plants were forced to replace the Telex equipment with a device that did not allow for reliable, hands-free, full-duplex communications capabilities, vital communications in and around the plant would take longer, and possibly require more workers to perform the same tasks. If the plants were forced to turn to a technology that caused results as significant as spurious actuation, interference or equipment desensitization, these communication breakdowns could lead to increased exposure and possibly an industrial-type accident, which may be complicated by its occurrence in the nuclear plant environment. Accordingly, strict application of the Part 74 eligibility rules would be counter to the regulatory scheme for workers set by the NRC, the federal agency responsible for protecting public health and safety through oversight of nuclear power plants.

D. The Nuclear Power Industry's Communications Requirements Are Not Met By Any Other Available Communications Equipment

In response to questions raised by FCC staff, NEI also sought input from plant operators regarding other available communication technologies that could serve as an alternative to the Telex equipment. Based on the responses from the plants, and based on UTC's knowledge of the plants' communications needs and the equipment available on the market today, Petitioners have concluded that there is not currently any alternative equipment on the market (much less a reasonable alternative) that would provide the requisite performance features necessary to assist licensees in satisfying the NRC's ALARA requirements as effectively as does the Telex equipment.

Indeed, none of the respondents to the NEI inquiry proffered that there was an equally effective alternative. Numerous responses stressed the absolute necessity for wireless equipment, in order that workers do not trip and equipment does not get tangled. Respondents also noted that

wired solutions can result in additional dosages of radiation during wired cable installation and removal. Thus, wired options will not work.

Virtually every response stressed the critical importance of reliably clear and dependable communications, not subject to interference from other technology that must operate at the plants, often in order to meet the NRC's ALARA standards. This objective is accomplished due to the fact that the Telex equipment operates on broadcast frequencies far from the spectrum employed for numerous other wireless devices that must be used in the plant, often simultaneously and in close proximity. Accordingly, based upon the plants' responses, this issue of spectrum bandwidth separation is an extremely important factor in maintaining the "fragile balance" of the plants' multiple technology and communications requirements, necessitated by the NRC's ALARA standards.

Accordingly, Petitioners contend that, today, there is no viable alternative equipment that would provide the requisite performance features necessary to assist in complying with the NRC's ALARA mandate. As a result, Petitioners have no alternative, other than requesting a waiver, in order to achieve compliance with the FCC's licensing requirements and the NRC's worker safety regulations.

E. Case Precedent Supports Petitioners' Waiver

Recent Commission decisions support Petitioners' request for a Waiver. In Dominion Virginia Power,²³ the Wireless Telecommunications Bureau granted Dominion's request for a Waiver of the Commission's rules to allow Dominion to utilize frequencies that were in the Public

²³ DA 04-2004, released July 2, 2004.

Safety Services Pool, for which Dominion was not eligible to be licensed.²⁴ The Commission found Dominion's waiver request compelling, noting that Dominion "will use the proposed frequencies at two of its nuclear power plants to provide critical infrastructure communications."²⁵ The Commission also concluded that Dominion had demonstrated that "there are no reasonable alternatives within the existing rules to accommodate the described needs,"²⁶ by showing that "alternative communications are not feasible . . . particularly given the sensitive nature of the nuclear facilities it operates."²⁷ Like Dominion, the nuclear power plants are not eligible to become Part 74 licensees, however, NEI members have demonstrated that they have no reasonable alternative to achieve the critical infrastructure communication that is not only desirable, but required, by the NRC's ALARA standards.

Last year, the Bureau granted a similar request from a nuclear facility, Entergy Nuclear Indian Point,²⁸ to access the Public Safety Services Pool, finding that Entergy's use of the frequencies would not interfere with incumbent users because of limited signal propagation, low (10 watts) Effective Radiated Power (ERP) and height use of no more than 12 meters above ground. A key factor that led to the Commission's grant of Entergy's waiver request due to the fact that these factors request for the specified frequencies will not frustrate the underlying purpose" of the relevant Rule Section which is to "ensure adequate spectrum for public safety activities, and to avoid

²⁴ Id. at 2.

²⁵ Id. at 2.

²⁶ Id. at 3.

²⁷ Id.

²⁸ See In re Entergy Nuclear Indian Point 2, LLC, at 21259.

interference to such communications from incompatible users.”²⁹ This is precisely the case with the instant Waiver: even lower ERP and signal propagation, together with clear evidence of no interference, as well as demonstrable methods available to insure continued non-interference.

In addition, the FCC has previously recognized the extent to which the nuclear power plants’ unique and critical communications needs affect the “safety of life; health and property” by including the plants in the definition of entities that are eligible for “public safety radio services,” and thereby receive an exemption from obtaining spectrum via FCC auction.³⁰

Moreover, and in support of the request for a five year Waiver, NEI points to the fact that, in 1995, the Commission conditionally waived the broadcast eligibility rules to allow New York City area public safety agencies to use television Channel 16 for a minimum of five years, after determining that such arrangement “could be concluded without affecting the existing television operations . . .”³¹ Nearly ten years later, in 2004, the Commission acknowledged that “Channel 16 has successfully coexisted with television operations”³² and that “the public interest would be served by changing the temporary authorization to a permanent allocation.”³³

Petitioners seek neither a temporary authorization of frequency nor a permanent frequency reallocation; rather, Petitioners seek only a 5 year waiver of the eligibility rules. Petitioners believe

²⁹ *Id.* at 3. See also, In re New York Stock Exchange Inc., Order 19 FCC Rcd 2602 at 4 (2004), (Commission waived the eligibility criteria “in light of the absence of any interference to any other user from NYSE’s proposed use of the public safety frequencies . . .”)

³⁰ See Report and Order in WT Docket 99-87, November 20, 2000 (interpreting Section 309(j)(2) of the Telecommunications Act.

³¹ See Waiver of Parts 2 and 90 of the Commission’s Rules to Permit New York Metropolitan Area Public Safety Agencies to Use Frequencies at 482-488 MHz on a Conditional Basis, 10 FCC Rcd 4466 (1995).

³² In re Amendment of Parts 2, 73, 74 and 90 of the Commission’s Rules to Permit New York City Metropolitan Area Public Safety Agencies to Use Frequencies at 482-488 MHz.

³³ *Id.*

that this modest accommodation is well within the bounds of recent Commission action to address *eligibility challenges in the context of demonstrable public interest*, especially where actual interference is not an issue. The fact that nuclear power plants are included among the Nation's critical infrastructure industries, for which the FCC is tasked with insuring access to effective and efficient communications technologies and services, makes this request even more compelling.

VI. The Nuclear Power Industry Meets The Standards For Grant Of A Waiver

Based on the foregoing, Petitioners respectfully submit that the nuclear power industry meets the FCC's *Waiver requirements* and should be granted a five year waiver of the FCC's license eligibility requirements under Part 74 of the FCC Rules in order to continue to use the Telex equipment. As set forth herein, grant of the Waiver is in the public interest because access to the Telex equipment demonstrably enhances worker safety and contributes to safe plant operation. Further, the fact that there has been no assertion that the plants' use of Telex equipment has caused *any* interference to eligible users' transmissions during current operation demonstrates that the underlying purpose of the rule would not be compromised by a grant of the relief requested. Moreover, given the lengthy list of unique circumstances that, together, effectively preclude any interference to the eligible users, strict application of the rule would indeed be inequitable, unduly burdensome and *contrary to public interest*. Finally, as described herein, after an exhaustive survey and additional research, neither NEI nor UTC can find a suitable, reasonable alternative that would meet the NRC's ALARA requirements and possess the requisite performance features of the Telex equipment; features that the plants have come to rely upon to protect workers' health and to promote plant safety.

Grant of the requested relief will remove the growing uncertainty surrounding the plant's ongoing right to use the Telex equipment, and will enable the plants to continue to *protect workers'*

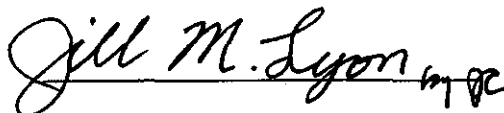
health by most effectively complying with the NRC's ALARA standard and promoting plant safety. Petitioners are not aware of any reasonable alternative to the Telex equipment. Once alternative equipment becomes available, it must be tested extensively in each plant for coverage analysis and interference-free operation. Thereafter, it must be ordered, installed and staff must be trained on the new equipment. The key point is that all of this will take time to accomplish and, in the meantime, the plants need to be able to rely on the Telex equipment to perform the essential tasks described herein. Given the fact that there is no evidence that the nuclear industry's use of the Telex equipment has ever caused any interference with the eligible users' transmissions, and given the proven means to insure that this continues to be the case, the proposed Waiver is a reasonable response to address this very unique and compelling situation.

For the foregoing reasons, Petitioners request a Waiver of the Commission's Part 74, Subpart H, eligibility requirements to permit licensees to continue to operate the Telex equipment on nuclear plant sites.

Handwritten signature of Ellen C. Ginsberg in cursive, followed by the initials "mjc".

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Handwritten signature of Jill M. Lyon in cursive, followed by the initials "mjc".

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Email: jill.lyon@utc.org

Dated: July 20, 2005

EXHIBIT A

Declaration of Marvin S. Fertel

I, Marvin S. Fertel, Senior Vice President and Chief Nuclear Officer of the Nuclear Energy Institute ("NEI") hereby declare as follows, under the penalty of perjury.

1. I have extensive knowledge of the operations of nuclear power plants. I have been involved in this Telex equipment matter and I have reviewed the information gathered from the plant personnel regarding industry use of Telex equipment and their judgment as to whether alternative equipment is available that would provide the requisite performance features on which the plants have come to rely to meet NRC requirements to reduce plant workers radiation doses.
2. I have reviewed the attached Waiver, including the factual statements set forth therein regarding the operations of the plants, the efforts to limit worker radiation dose and the role Telex equipment plays in those efforts. The factual statements are true and complete to the best of my knowledge.


Marvin S. Fertel

Dated: July 20, 2005

Ellen C. Ginsberg, Esquire, 1776 I Street N.W., Washington, DC 20006,

**United States of America
FEDERAL COMMUNICATIONS COMMISSION
EXPERIMENTAL
SPECIAL TEMPORARY AUTHORIZATION**

EXPERIMENTAL

(Nature of Service)

XR MO

(Class of Station)

WC9XCR

(Call Sign)

0127-EX-ST-2005

(File Number)

NAME Nuclear Energy Institute

This Special Temporary Authorization is granted upon the express condition that it may be terminated by the Commission at any time without advance notice or hearing if in its discretion the need for such action arises. Nothing contained herein shall be construed as a finding by the Commission that the authority herein granted is or will be in the public interest beyond the express terms hereof.

This Special Temporary Authorization shall not vest in the grantee any right to operate the station nor any right in the use of the frequencies designated in the authorization beyond the term hereof, nor in any other manner than authorized herein. Neither the authorization nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This authorization is subject to the right of use of control the Government of the United States conferred by Section 706 of the Communications Act of 1934.

Special Temporary Authority is hereby granted to operate the apparatus described below:

Purpose Of Operation:

Operation of wireless headsets and intercom devices within nuclear power facilities.

Station Locations

(1) MOBILE: continental United States

Frequency Information

MOBILE: continental United States

Frequency	Station Class	Emission Designator	Authorized Power	Frequency Tolerance (+/-)
150-216 MHz	MO	190KGXE	250 mW (ERP)	
470-608 MHz	MO	190KGXE	250 mW (ERP)	
614-806 MHz	MO	190KGXE	250 mW (ERP)	

This authorization effective April 07, 2005 and
will expire 3:00 A.M. EST October 07, 2005

**FEDERAL
COMMUNICATIONS
COMMISSION**

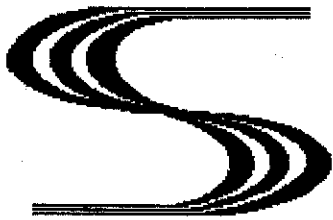


Licensee Name: Nuclear Energy Institute

File Number: 0127-EX-ST-2005 Call Sign: WC9XCR

Special Conditions:

- (1) In lieu of frequency tolerance, the occupied bandwidth of the emission shall not extend beyond the band limits set forth above.
- (2) The station identification requirements of Section 5.115 of the Commission's Rules are waived.
- (3) Operation is subject to prior coordination with the Society of Broadcast Engineers, Inc. (SBE); ATTN: Executive Director; 9247 North Meridian Street, Suite 305; Indianapolis, IN 46260; telephone, (866) 632-4222; FAX, (317) 846-9120; e-mail, executivedir@sbe.org; information, www.sbe.org.



SPECIAL SYSTEM SERVICES

1 Wayne Circle
Lower Gwynedd, PA
19002

Office (215) 699-4427

FAX (215) 699-4427

March 3, 2005

Federal Communications Commission
Wireless Telecommunications Bureau
1270 Fairfield Road
Gettysburg, PA 17325

To Whom It May Concern:

On March 02, 2005 the Exelon Generation Company conducted tests on the Telex model BTR-700 (Base unit) and the TR-700 (Head set unit) at the Limerick Nuclear plant in Limerick, PA. The purpose of the testing was to identify the range of the units and to verify the proximity of the plant parameter to any possible entity that may be subject to interference.

The units operate at a maximum of 50 mw of output power. The base unit was set up outside on a table, free of obstructions, on the Limerick Nuclear plant property. A Hewlett Packard Spectrum analyzer was set up in a van with a magnetic mount antenna on the roof (about 6 feet above the ground). We first tested the base unit at intervals of 0.1 miles until signal was lost. We then repeated the test with the headset. This time the Spectrum analyzer was placed on the table with the base and the headset signal strength was measured as we drove away. The head set antennas were placed on the outside of the van window, toward the test location. There were no obstructions between the base and the van during the testing.

Test results:

Distance (ft.) (meters)	Frequency 522.3 MHz Base Signal strength (dBm) (uv/m)		Frequency 632.7 MHz Headset Signal strength (dBm) (uv/m)	
10 3.048	-40	2236.067	-50	707.106
528 160.9	-80	22.36	-90	7.071
1056 321.9	-100	2.236	-100	2.236
1584 482.8	-105	1.2571	-108	0.89
2112 643.7	-110	0.707	-114	0.446

Conclusion :

The signal strength from the base and headset decreases to the noise level of between -110 and -114 dBm where communications is lost between units. This occurs at a distance of about 2000 feet. No homes or businesses are located within a 2000 foot parimeter of the plant property boundry. Any communications within the plant or even within the plant boundry would not produce a signal strength which could be heard outside the plant property. Tests within the plant were cancelled because every building would further attenuate the signal by between 10 and 20 dBm and we loose signal from the parimeter test position before we reach the plant buildings.

The full duplex headsets are essential to the safety and support of the plant activities and none of the operations has been the subject of interference complaints.

Respectfully,

T. Fred Short, Electrical Engineer and Consultant for Exelon